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ABSTRACT

This report on ability grouping or "streaming" in secondary schools is an overview of research on the subject done in schools in many different countries. Referring to an extensive bibliography, the author gives examples of conclusions reached through observation and experiment on the part of educators. The complexity of the subject is revealed by the radically differing opinions on the validity, success, or failure of ability grouping at this educational level. (JD)

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EDUCATIONAL ISSUES
Review No 1

# ABILITY GROUPING AND MIXED-ABILITY GROUPING IN SECONDARY SCHOOLS

by

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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# ABILITY GROUPING AND MIXED-ABILITY GROUPING IN SECONDARY SCHOOLS

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## A Introduction

There is some difficulty in separating out arguments about setting, streaming and other forms of intraschool grouping from those about interschool segregation. Evidence about ability grouping and mixed-ability grouping from grammar schools may not be wholly relevant to comprehensive schools. Again there are all sorts of 'comprehensives', varying methods and degrees of streaming, setting and mixing; different sizes of school, differing social backgrounds, and above all variety of teaching skills and methods. It is doubtful whether transatlantic and continental evidence is relevant; but I have included some to eke out the scanty English and almost non-existent Scottish information. Research is being carried out in Aberdeen College of Education on 'Internal School Organisation and Pupils' Ambitions'; it is timed to finish in October 1975.

## B Results not conclusive

The only general agreement about the results of research hitherto is that no agreement has resulted. "Recent studies have in some cases found ability grouping to be associated with increased attainments by high ability students and in other cases with decreased attainment" (20). Hoyle (28) speaks of "the rather ambiguous findings in ability grouping". Again, "with regard to grouping within schools, evidence is plentiful but conflicting" (67, p76). "The quantity of research is great, the quality irregular, and the results generally inconclusive" (50). "The most tenable conclusion is that neither ability grouping nor random grouping has a consistent general effect on achievement at any of the levels tested" (06). "Many pieces of evidence are available in the streaming v non-streaming argument, but the findings of different research are often diametrically opposed to one another or inconclusive" (52, p40). "Evidence on a research basis or from individual teachers' experience is frankly confusing and conflicting" (37).

Conclusions or opinions in general acceptance of mixed-ability grouping are to be found in 25, 30, 32, 34, 49, 58, 61, 09; modified acceptance in 07, 27, 49, 56; Rejection in 23, 40, 44. The authority behind these opinions of course varies greatly. Some of the references are to articles by individual teachers based on experience in a single school. There may be in some periodicals an editorial bias in the acceptance of articles. Consultation with 1,300 teachers resulted in the bare statement: "on the question of streaming there was conflict of opinion" (55).

## C Research Weaknesses

Passow (50) gives the following reasons for the inconclusiveness of the researches: (i) variety of aim and purpose; (ii) total number of pupils studied often far too small; (iii) differing durations of studies; (iv) inadequacy of selection base and matching of controls ("matching of individuals on a single score is a doubtful procedure"); (v) variations of content and method of teaching not controlled; (vi) the teacher factor completely ignored; (vii) few studies evaluated changes in personal-social behaviour of pupils; (viii) no study made of effects on teachers and administrators.

As regards (ii) above, numbers were large in 05, 06, 08, 15, 21, 31, 63. Of these, only 21 is British. "Clearly if empirical research is to play the part that it certainly ought to play ... it ought to be mounted on a sizeable scale" (67, p87).

As regards (vi), the teacher factor was not ignored in 05.

As regards (vii), some attention to these aspects was paid in, for example, 01, 02, 06, 13, 16, 17, 21, 25, 38, 42, 48, 52, 54, 62, 63. In 67 (p85) it is noted that it is a function of research to give pupils a chance to influence educational policies by demonstrating, objectively, the manner in which they respond to them as distinct from the manner in which their teachers and others assume that they respond.

But (i) is perhaps the most fundamental criticism. To quote 67 again (chapter 5, p130): "one of the reasons why research has not served to settle or even to diminish the controversies that centre around some grouping practices is because the differences of view involved are not entirely or even mainly about the measurable educational consequences of these practices. The sharpest conflicts would seem to be about the more far-reaching influences that grouping procedures - interschool groupings particularly - can exert on the structure of society as a whole, and on the distribution within it of privileges and opportunities." And later (p135) "our review has convinced us that in the past grouping practices have been determined by social and political rather than by purely educational considerations". (For 'educational' should we read 'academic'? Plato would not have accepted a split between social-political and educational.)

D Cui Bono? Claimed Advantages and Disadvantages

What do we want our school system to do? Will we better reach these aims by ability grouping or by mixed-ability grouping or by random grouping? Arguments are deployed in 21 (p19), 23, 27, 30, 32, 40, 52 (pp41, 52), 67 (pp37, 94, 109, 130-136). The wider implications are best brought out in 67, but the usual arguments are fairly fully and neatly set out by Johnstone (32) as follows:

Setting Advantages (i) faster and slower go at own pace; (ii) slow can be on different course; (iii) less likely for fast to be frustrated; (iv) in top sets friendly competition stimulates; (v) slower not exposed in class as inferior; (vi) teacher more confident with a homogeneous class.

Setting Disadvantages (i) if set early, pupils have not time to adapt to secondary school; (ii) naive to assume pupils will continue to learn at same relative speed; (iii) once categorized, pupils will perform accordingly; (iv) some pupils at bottom of top sets will do badly; (v) may perpetuate social distinctions; (vi) competitive ethos may make the bright selfish and patronizing; (vii) in bottom set, no good pupils as models; (viii) individual differences within a set may be overlooked and lockstep teaching given.

Mixed-Ability Grouping Advantages (i) possible social interaction; (ii) faster can do individual reading, etc; (iii) less competitive atmosphere; (iv) teachers in department share common experience, can discuss and give mutual help.

Mixed-Ability Grouping Disadvantages (i) teacher has to produce much supplementary material; (ii) group activity can lead to bad discipline; (iii) teacher has varying levels of objectives; (iv) teacher has problem of what level of language to use.

The UNESCO discussion (67) has been exemplified in section C above; one more quotation is worth giving (p136): "the available evidence lends support to the view that grouping procedures can effectively serve either to maintain the structure of a society or to bring about changes in the distribution of privileges and opportunity within it".

E Academic Results

This is the field in which measurement is easiest, and is for many parents and teachers the one that matters: 'getting on'. Let us take the foreign evidence first.

Israel (027) Setting at the top of the elementary school produced progress and attainments significantly superior to those of the control group, particularly in arithmetic.

Germany: Baden-Wurttemberg (01) The mixture of integration and streaming produced improved attainments in both streams.

Germany: Hesse (57) "... the results (of setting) display no equality of opportunity ... with regard to equal performance". Presumably this means the less able did not profit.

Sweden (10) The 'differentiated' classes achieved significantly better exam results after two years than the 'integrated' classes; by the end of the third year the differences disappeared.

USA: Ohio (05) The seven experiments all showed different results. The one common feature was that the 'slow' pupils always gained by homogeneous grouping; the average pupils gained 4 times, lost 3 times; the bright gained 3 times, no change twice, lost twice.

USA: Utah (06) The few differences found tended more often to favour the 'ability grouping with acceleration' against the 'random grouping with enrichment'. Neither grouping had a consistent general effect on achievement.

USA (08) 'Differentiated' pupils equal in grade 7, inferior in grade 8, superior in grade 9.

USA: Ithaca (19) Achievement indices higher in the 'most homogeneous' groupings.

Canada: Edmonton (15) In large schools, 'high level' pupils when streamed showed a difference in only two classes: 1 for the better, 1 for the worse. 'Low achievers' did worse when streamed. In small schools, half the differences were significant, roughly equal in each direction.

England (52) The mixed-ability grouping schools in fourth year did slightly better in reading, slightly worse in maths, rather better in non-verbal tests than would have been expected from the previous testing of the pupils. But this was not a 'set-up' experiment, it just took the schools as it found them, with various, and sometimes changing, degrees of setting, banding, streaming and mixing. "Are the mixed-ability grouping schools nearer to attaining the goals of comprehensive education? There is no evidence to support or refute this on the academic side" (p175).

England (21) In a comparison of pupils (in all kinds of secondary schools) from streamed and non-streamed primary schools, only 7 significant differences were found in 72 comparisons, all in favour of unstreamed. Gains in streamed and non-streamed secondary schools were also compared; of 40 comparisons, only five

showed significant differences, 4 in favour of unstreamed, 1 of streamed. The author warns: "The great complexity of organisation in the secondary school precluded the simple labelling of streamed and non-streamed ... the results of comparison in this study should be interpreted with caution". There were too few pupils in comprehensive schools for testing to give valid results. This was the only study to employ tests of 'divergent thinking'. Deterioration was shown in grammar schools with ability grouping, in secondary modern with both ability grouping and mixed-ability grouping; little change in the comprehensive schools.

The other studies were of single schools in England and Wales that changed from ability grouping to mixed-ability grouping.

Liverpool (16) Change in this grammar school produced more 5-subject passes in O-level, but the quality of the pass of the brightest fell, and results were poorer in physics.

Barry (52) It is reported that there was no evidence the more able were retarded, but there was trouble with languages (Welsh and French).

Coventry (61) Here certificate results improved: O-level passes per pupil (from 2.6 to 3.1), grade of pass (+1), percentage gaining at least 1 pass, and percentage of 5+ passes. The abler pupils improved their pass average.

Bristol (56) Here there was setting in French and Maths, and improvement is claimed in both the 'set' and the 'unset' subjects; but certificate results are not given.

Scotland No published studies that I am aware of.

## F Discipline

In this area evidence is scanty, and, of course, a matter of judgement. In one grammar school, behaviour is said to have improved with mixed-ability grouping (16); in another, behaviour patterns were 'good' (52). In a secondary modern, 'pupil subcultures were to some degree generated by streaming' - by form 4, the two lower streams shared a 'delinquescent' subculture (25). In a fourth school (52, p108), the change to mixed-ability grouping resulted in the disappearance of a delinquent group, 'notorious for defiance and bullying'. Against this, we have the evidence of a teacher that with a change from mixed-ability grouping to setting, "discipline improves instantaneously and vastly" (40).

Not much to go on, yet this would be the first thing a young teacher - and many anxious parents - would want to know.

## G Staying On At School

One school (61) found a big increase after non-streaming - from 36% to 75% - above the national average increase. In a comparison of two schools (11), the 'mixed-ability grouping + setting' school had more holding power than the 'banded' school. But in a bigger study (21) little difference was found.

## H Attitude to School

There is some evidence that streaming or setting divides pupils into upper stream pro-school and lower stream anti-school groups (25, 42); but in one grammar school (38) polarisation took place even in a mixed-ability grouping first year.

One NFER study (52) found mixed-ability grouping schools, especially rural ones, relatively favourably regarded by pupils; another (21) found no difference - the latter confirmed in one grammar school (16). An American study found that in ability grouping schools the less able pupils had a positive attitude, the abler pupils more negative (63).

Participating in school activities was better for mixed-ability grouping (21, 52).

## J Friendship Patterns

Since improvement in social mixing is one of the benefits claimed for mixed-ability grouping, some attention has been paid to this aspect, usually by questionnaires: 'whom would you like to work with?' and so forth. Most studies show no difference as between ability grouping and mixed-ability grouping (13, 31, 48, 52). A Michigan inquiry (17) found that friendship choices were more evenly distributed in streamed classes; in unstreamed classes the slow more often felt left out. Sometimes the brightest pupils received most friendship choices (16, 31); sometimes the bright chose the bright, the dull chose the dull (13, 21). Note also that, as mentioned in F, delinquents tend to hang together in streamed schools (25, 52).

Ill-feeling due to differentiation was noted in Israel (02) and Sweden (54).

Parents are apt to fear that in mixed classes, pupils with good work standards are influenced by those with poor standards. Eggleston (19) claims that peer-group pressure had little influence if there was support and encouragement from home and the adult community in general; and in Sweden (31) the finding was that relationships between parental and pupil attitudes were quite significant.

## K Self-image and Other Personal Characteristics

In a US study (63) the pupil of average and lower ability had a better self-concept in ability grouping schools. In an English study (21) the self-image of primary boys and girls deteriorated when they went to grammar schools, that of boys improved in secondary modern and comprehensive schools. Findings from Utah (06) were that no differences were found in aspiration level; that measures of poise, ascendancy and self-assurance showed no difference for pupils of high or low ability, but for the average were better in mixed-ability grouping. In a London school (62) teacher ratings on personality were higher for upper streams, but a questionnaire to the pupils showed more similarity than dissimilarity.

## L Efficiency of Division into Streams or Sets

Discussion usually assumes that the abler and/or more industrious pupils are in the higher stream or sets: ie, that the sets are homogeneous. Not everyone agrees. Khan (37) found a sizeable overlap in abilities and attainments in streams. The NFER study of 59 comprehensive schools found that allocation to groups was 'fairly imprecise', resulting in 'great overlap of ability in streams, bands, and sets' (48, p63). "There appear to be three schools of thought: (a) initial allocation with minor adjustments later; (b) initial allocation with major reshuffling in the first weeks or months; (c) mixing of abilities on entry followed by a gradual separation over 2-3 years". (a) and (b) were of about equal frequency, (c) infrequent. Only one of the 59 schools did not stream or set - this was in 1969.

In a study of a secondary school (60), when the top 30 names in examinations after one term, after one year, and after three years were listed, only 11 names occurred in all three lists. In another school (42), it was found that though setting was flexible in early years, it became very rigid at the end. Two studies of London schools (14, 26) claim that promotion between streams occurs more frequently with pupils from middle class backgrounds.

An American investigator (17) noted that teachers in one city seemed to prepare for from 3 to 5 levels in a class, whether it was a streamed or an unstreamed one.

M Teaching and Teachers

There might be two key texts taken for this section:

(a) "It is futile to group unless constant efforts are made to improve and differentiate content and teaching technique for different ability levels". (Billet, 05).

(b) "If I were to be asked to specify the single most significant outcome of educational research in the last decade, I think I would select just this one: the power of teacher attitude and teacher expectation" (Wiseman, 66).

(a) is echoed in the UNESCO study (67, pp83-84): "It is not an exaggeration to say that teachers have the power to ensure or to jeopardize the success of any particular form of organisation ... To a considerable extent it would seem to be true that if teachers believe in the appropriateness of a particular kind of grouping it is found to operate successfully ... Any change in these practices, if it is to be successful, needs to be planned in the fullest consultation with the teachers concerned."

If Billet's advice is to be followed, it becomes virtually impossible to set up a comparison experiment, for if the content has been varied, what common test is to be set at the end? Different teaching techniques are likely to have in mind different end products (eg, material memorised v principles understood, theoretical understanding v practical ability); so what common test can be set?

We may note that in the Ithaca experiment (63) curricula were not differentiated, yet it was in the 'most homogeneous' groupings that the achievement index was higher.

The NFER appraisal (52, p146) comments, "to ask teachers believing in the system to operate in another does not necessarily alter their class organisation, attitudes, and teaching techniques. A reorganisation of teaching groups may, therefore, achieve little unless it is done with the approval of the teaching staff." From Hesse (57) comes "we discovered that the practised social attitude and the didactic ability of teachers are more important than external methods of differentiation." Again Thomas (59) declares that the teacher is indeed the central influence - he is evidently thinking mainly of the classroom atmosphere, for he refers to 'marks, reports, competitive exams, detention'. Keddie (34) goes so far as to claim that "differentiation in teaching styles and uses of material with pupils labelled 'able' and 'less able' is likely to play a considerable part in creating those differences between pupils which the practice of streaming attributes to them." He bases this on a study of teachers' expressed attitudes. Some support for this claim comes from the NFER Primary French project (66, p90). A quarter of the teachers involved in it marked agreement with the statement "teaching French to low ability children is a waste of time". After two years of French programmes, results in a listening comprehension test showed that schools with teachers holding these views had a significant concentration of lowscoring pupils, while high scorers occurred most frequently with teachers holding the view that all children should have an opportunity of learning French.

The UNESCO survey (67, pp95-96) notes that the various reports on which the book was based did not provide much information on how the pupils were actually taught. Swedish reports (41, p66) say that the majority of teachers found mixed-ability grouping classes more difficult to teach and thought pupils' progress was impeded. Indications were that the more experience teachers acquired of mixed-ability grouping classes, the more favourable their attitude. The NFER appraisal (52, pp143-147) found that teachers in mixed-ability grouping schools put less stress on the need to mould pupils, and had different attitudes to a whole range of educational issues - eg, to slow learners, to noise in the classroom, to physical punishment. One teacher (52) reports that when his school changed over to mixed-ability grouping, teaching methods had to change. Another writer (58) who had interviewed science teachers found a definite link between their commitment to principles of non-streaming and the way they went about their work. Two mathematics teachers (49) say that the most important result of the changeover in their school was teachers' reappraisal of their attitude to the capabilities and limitations of children.

The NFER follow-up of streamed and unstreamed primary pupils (21, p23) provides a suitable closing quotation: "More information would be needed about the values, approaches and methods associated with streaming and non-streaming at the secondary level in order to make more than a tentative evaluation of the effects of the two types of organisation."

APPENDIX

Review of two recent books

1) DAVIES, R P (Ed) *Mixed Ability Grouping: possibilities and experiences in the secondary school,* Temple Smith, London, 1975.

2) KELLY, A V (Ed) *Case Studies in mixed ability teaching,* Harper & Row, London, 1975.

These two books are not research reports; they represent the experience of twelve schools in which mixed ability teaching has been used. Five of the chapters in (2) are by headteachers, and seven by classroom teachers; five chapters in (1) are by departmental heads who are specialists in History, English, Modern Languages, Maths and Science, respectively.

The main interest lies in the organisation and methods described. Non-streaming demands the rethinking of aims, syllabuses and attitudes; there is repeated emphasis on the need for changes in school and departmental organisation, timetable, curriculum, resources and methods if mixed ability grouping is to be a success. Close cooperation within and between departments is necessary.

Mixed ability teaching imposes heavy work on teachers, though the strain becomes less with experience. Work has to be individualised, though the contributors differ as to whether it is desirable to continue with class lessons. The books may help teachers who change over to mixed ability grouping; the process of change is described, as well as the outcome.

Practice varies from school to school (in the English schools described): some use mixed ability grouping for languages and maths in the early years, while others do not. Some see the teaching of French in mixed ability groups as ideal in the First Year and satisfactory in later Years; others believe it should never be taught to mixed ability classes (see under Organisation, p12).

Chapters (in 2: Kelly) on mathematics and science are particularly interesting. That on science refers favourably to the Scottish Integrated Science Scheme.

The writers in general claim that the least able are better motivated, the average work nearer to their upper ability level, and the able do not suffer. One contributor thinks that the pupil who most needs watching is the average under-performer; the most and least able force themselves on the teacher's notice. Where references are made to discipline, there is agreement that the worst problems are mitigated when there is no longer a 'sink class'.

The following quotations illustrate these points.

"Instead of teaching towards the middle of an A stream, teachers now try to ensure that every member of a class is extended".

"I sometimes wonder if non-streaming highlights problems that previously we didn't even realise existed, such as the undertaxing and underperforming of many of our youngsters".

"Teaching history to unstreamed groups can work if it is rooted in two foundations, hard work, and a preparedness to see pupils as individuals".

(1: Davies)

"Some people take readily to having time for themselves in lessons, others take much longer to develop work on their own, and some never do so".

(1: Vickers)

"Our experience has convinced us that Mixed Ability Grouping is good, though I think that all of us would agree to it being very much harder work than a streamed situation. We have been forced to examine our aims and our subject, and have involved ourselves in the writing of materials ... We are now far more concerned with the individual mathematical development of children, rather than the assimilation of a set amount of Mathematics during a specified period. We have very few discipline problems, perhaps because the children are interested, perhaps because of the degree of organisation and preparation for lessons, or because we have not created a sink group".

(1: Wilcox)

"The mechanical change (ie, school organisation) is the most easy to accomplish. It is the necessary accompanying adaptation of attitude and reappraisal of often long-practised teaching methods that are far more difficult ... any attempt to introduce Mixed Ability Grouping which is to have a chance of success must be done with the support of those involved, rather than in their teeth".

(1: Bosworth)

Attitude

"Every contributor has indicated the extent to which a complete re-evaluation of his or her work has become necessary".

(2: Kelly)

"... it is in the classroom by virtue of teacher and pupil attitudes that success and failure will depend".

(2: Hoyles)

"This approach (in science) can only work if all the staff want it to work".

(2: Haslam)

Academic results

"Pupils proceeding to Further Education after change to Mixed Ability Grouping rose from 2 to 45. Examination subject entries rose from 186 to 533".

(2: Legon)

"Temptation for the bright child to work at a slower pace to avoid standing out from her peers".

(2: Hoyles)

"Exam results showed a steady improvement".

(2: Hunt)

"Difficult to analyse gains and losses - none of the (Maths) teachers doubts Mixed Ability Teaching a success and an improvement. 'The greatest achievement of Mixed Ability Teaching has been to develop the confidence and enthusiasm of all the children and most notably that of the less able".

(2: Prettyman)

"Teaching a language in Mixed Ability Grouping creates an atmosphere in which a greater number of pupils of a wider ability range develop an interest in language learning".

(2: Walmsley)

Discipline

"Behaviour patterns are more even, nearer those of AB streams than of CD".

(2: Young)

"The discipline problems of the 'bottom sets' are lessened".

(2: Haslam)

"Mixed Ability Grouping has not solved all discipline problems, but one is at least dealing with the tangible evil of problem individuals rather than the intangible resentment of a group".

(2: Walmsley)

Organisation (from 2: Kelly)

Northcliffe School, Doncaster: Maths has broad setting. Modern Language is an option in Sec IV.*

Milefield School, Barnsley: French and Maths are not mixed ability.

Brown Woods School, London: Modern Languages set from Sec II, Physics, Chemistry and Geography from Sec III.

Evelyns School, West Drayton: French Mixed Ability Grouping is ideal for I, beneficial for most of II, untenable in Sec III, where European Studies is an alternative, and French is setted.

* Note that these class designations relate to England. Because of differences in the age of transfer from Primary to Secondary education, classes of pupils of equivalent age in Scottish schools are numbered one lower, eg, Sec IV in England corresponds to Sec II in Scotland.

## REFERENCES


01 (Baden-Wurttemberg) See 67, p65.

Germany, Grades 5-9, part-time mixed-ability grouping, part-time divided (A) academic advanced lessons, (B) extra tuition and practical.

02 (Beersheba) See 67, pp64, 174-177.

Israel, 2 years. Two top elementary grades setted (6-8 sets) in English, Hebrew, Arithmetic; control mixed-ability grouping.

03 BUTCHER, H J (Ed) *Educational Research in Britain* University of London Press, 1968.

Review of recent research. (See 14, 18, 26, 45, 60, 65.)

04 BUTCHER, H J and PONT, H B *Educational Research in Britain 3* University of London Press, 1973.

Review of recent research. (See 23, 25, 28, 38, 39.)

05 BILLET, R O *The Administration and Supervision of Homogeneous Grouping* Ohio State University Press, 1932. Review in 67, pp171-174.

USA, 1 year. 902 pupils, 5 schools. Achievement in grade 9 English. 7 experiments, each with 3 experimental and 3 control groups taught by same teacher.

06 BORG, W R *An Evaluation of Ability Grouping* Utah State University, 1964. Review in 67, pp181-185.

USA (Utah) 4 years. 4,000 pupils. Grades 4 and 6-9. 2 districts compared, one with ability grouping and acceleration, one with mixed-ability grouping and enrichment. In grades 7-9, maths and science only.

07 BOYES, J "Teaching Modern Languages to Mixed-Ability Classes" *Modern Languages in Scotland*, 6, 89-94, 1975.

Opinion after 5 years' experience.

08 BRIEDENSTINE, A S "The Educational Achievement of Pupils in Differentiated and Undifferentiated Groups" *Journal of Experimental Education*, 5, 91-135, 1936. Review in 67, pp185-187.

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Advice on methods.

10 CARLSSON, B "Växjöförsöken" Uppsala, 1963 (Unpublished). cited 67, pp 65-66.

11 CONE, S "Towards the Open School", *Comprehensive Education*, 14, 16-17, 1970.

Two comprehensive schools: one mixed-ability grouping and some setting in Maths, French, Physics; other 2 bands and remedial.

12 DAVIES, R P "Mixed-ability grouping: Possibilities and experiences in the secondary school". Temple Smith, London 1975.

Reviewed in appendix.

13 DEITRICH, F R "Comparison of Sociometric patterns of Sixth-grade pupils in two school systems: ability grouping compared with heterogeneous grouping". Journal of Educational Research, 57, pp507-512, 1964. Reviewed in 67, pp195;196.

USA. 198 pupils, 2 schools, grade 6. Sociometric questionnaire.

14 DIXON, S "Some aspects of School Life and Progress in a Comprehensive School in Relation to Pupils' Social Background". Unpublished thesis, University of London Institute of Education, 1962. See 47, p217.

One school.

15 DOCKRELL, W B "Edmonton Junior High School Streaming Project" *Studies in Grouping*, Alberta Teachers' Association. Reviewed in 67, pp196-199.

Canada, 8 schools, c2,000 pupils. 2 years. Mixed-ability grouping first year; ability grouping second year. Results compared at 3 levels of ability.

16 DOUGLAS, J F "A Study of Streaming at a Grammar School" *Educational Research*, 15, 140-143, 1973.

One Liverpool school. 100 boys from 7 intakes while school changing from rigid streaming in forms 1-5 to mixed-ability grouping in forms 1-3 and 2 bands in forms 4-5. Matched for VRQ.

17 DREWS, E M "The Effects of Heterogeneous and Homogeneous Grouping on Children at three Ability Levels in Ninth Grade English Classes". A report to the Lansing, Michigan, Public Schools, 1962. Reviewed in 67, pp202-206.

USA. 432 pupils. Sociometric choices.

18 EGGLESTON, S J "Staying on in Non-selective Secondary Schools" Unpublished thesis, University of London, 1965. Reported in 47, p218.

19 EGGLESTON, S J "Some Environmental Correlates of Extended Secondary Education in England" *Comparative Education*, 3, 85-99, 1967. Referred to in 48.

20 *Encyclopaedia of Educational Research*, 4th Edition, Macmillan, London, 1969.

21 FERRI, E *Streaming: Two Years Later*. NFER, London, 1971.

1,716 pupils. Many schools. 2 years. Follow-up in 1969 of one-third of pupils studies 1963-67 by Barker-Lunn (*Streaming in the Primary School*, 1970). Covers tests of academic ability, divergent thinking, self-image, pupil attitudes, pupil participation, etc.

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Opinion. Analyses mathematical abilities of pupils in different streams.

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